

RAGE (E-1): sc-74473

BACKGROUND

Advanced glycosylation end products of proteins (AGEs) are nonenzymatically glycosylated proteins that are associated with a variety of conditions, including diabetes and other vascular disorders, as well as amyloidosis. These proteins regulate cellular functions via specific cell surface acceptor molecules, such as RAGE (receptor for advanced glycosylation end products). RAGE is a type 1 membrane protein that is found on the surface of endothelial cells, mononuclear phagocytes and vascular smooth muscle cells. Binding of AGEs to RAGE results in the induction of cellular oxidant stress and activation of the transcription factor NF κ B. Evidence suggests that the induction of oxidant stress results in the activation of an intracellular cascade involving p21 Ras and MAP kinase, which leads to activation of transcription.

CHROMOSOMAL LOCATION

Genetic locus: AGER (human) mapping to 6p21.32.

SOURCE

RAGE (E-1) is a mouse monoclonal antibody raised against amino acids 1-300 of RAGE of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RAGE (E-1) is available conjugated to agarose (sc-74473 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74473 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74473 PE), fluorescein (sc-74473 FITC), Alexa Fluor[®] 488 (sc-74473 AF488), Alexa Fluor[®] 546 (sc-74473 AF546), Alexa Fluor[®] 594 (sc-74473 AF594) or Alexa Fluor[®] 647 (sc-74473 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-74473 AF680) or Alexa Fluor[®] 790 (sc-74473 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

RAGE (E-1) is recommended for detection of RAGE of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:100), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for RAGE siRNA (h): sc-36374, RAGE shRNA Plasmid (h): sc-36374-SH and RAGE shRNA (h) Lentiviral Particles: sc-36374-V.

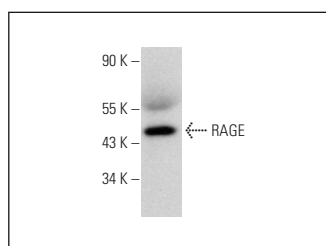
Molecular Weight of RAGE: 46 kDa.

Positive Controls: human lung extract: sc-363767.

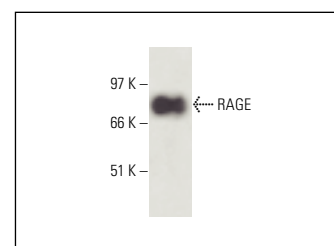
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



RAGE (E-1): sc-74473. Western blot analysis of RAGE expression in human lung tissue extract.



RAGE (E-1): sc-74473. Western blot analysis of human recombinant RAGE.

SELECT PRODUCT CITATIONS

1. Yao, D. and Brownlee, M. 2010. Hyperglycemia-induced reactive oxygen species increase expression of the receptor for advanced glycation end products (RAGE) and RAGE ligands. *Diabetes* 59: 249-255.
2. Sharaf, H., et al. 2015. Advanced glycation endproducts increase proliferation, migration and invasion of the breast cancer cell line MDA-MB-231. *Biochim. Biophys. Acta* 1852: 429-441.
3. Matou-Nasri, S., et al. 2017. Biological impact of advanced glycation endproducts on estrogen receptor-positive MCF-7 breast cancer cells. *Biochim. Biophys. Acta* 1863: 2808-2820.
4. Su, S.C., et al. 2019. Cilostazol inhibits hyperglucose-induced vascular smooth muscle cell dysfunction by modulating the RAGE/ERK/NF κ B signaling pathways. *J. Biomed. Sci.* 26: 68.
5. Wang, Y., et al. 2020. MD2 activation by direct AGE interaction drives inflammatory diabetic cardiomyopathy. *Nat. Commun.* 11: 2148.
6. C, R.C., et al. 2020. G82S RAGE polymorphism influences amyloid-RAGE interactions relevant in Alzheimer's disease pathology. *PLoS ONE* 15: e0225487.
7. Wang, J.D., et al. 2021. Exosomal HMGB1 promoted cancer malignancy. *Cancers* 13: 877.
8. Miyauchi, Y., et al. 2021. Molecular mechanism of dihydropyrazine-induced cytotoxicity: the possibility of an independent pathway from the receptor for advanced glycation end products. *J. Toxicol. Sci.* 46: 509-514.

RESEARCH USE

For research use only, not for use in diagnostic procedures.